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HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER
SHAW, PELING ANDY

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 December 2008*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

1.   Amendment received on 12/10/2008 has been entered into records. Claim 1 is amended.

Claim 14 is new. Claims 1-14 are currently pending.

2.   Applicant's submission filed on 07/29/2008 was entered. Claims 1-13 were amended.

3.   Amendment received on 01/30/2008 was entered into records. Applicant's amendment to

the specification was reviewed and accepted. Claims 1-2, 4-6 and 8-12 were amended. Claim 13

was new.

Priority

4.   This application has claimed a priority # CHINA 03106929.0 on 02/26/2003. Receipt is

acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed

of record in the file. The filing date is 02/06/2004.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject matter
> sought to be patented and the prior art are such that the subject matter as a whole would have
> been obvious at the time the invention was made to a person having ordinary skill in the art
> to which said subject matter pertains. Patentability shall not be negatived by the manner in
> which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US

20040165592 A1), hereinafter referred as Chen in view of Silverman (US 6731649 B1),

hereinafter referred as Silverman.

   a.   Regarding claim 1, Chen shows (claim 1) a method for providing service with

        guaranteed Quality of Service (QoS) in IP access networks, each of the IP access

        networks comprises an edge router connected to a backbone network, and an access

        network end device connected to subscribers (Figs 1 and 3, paragraph 3: guarantee

        application specific IP QoS via the combination of ATM switched virtual connections

        (SVCs) and permanent virtual connection (PVCs)), comprising: a. a service entity

        (paragraph 31: connection server 25) at network service control layer obtaining a

        calling subscriber address and a called subscriber address (paragraphs 40-41 and 43:

        routing packet, policy routing instruction includes source IP network address and

        destination IP network address) and QoS requirement for a service through analyzing

        a service request of the calling subscriber (paragraph 31: a subscriber transmits a

        connection setup request to the connection server; paragraph 32: calculate available

        bandwidth and perform CAC for ATU-R and DSLAM; paragraphs 35-36: CAC to

determine if sufficient available bandwidth exists in ATU-Rs and DSLAMs and

connection server sends SVC requests through a proxy signaling agent to edge switch

of ATM network; paragraph 45: connection server establish two connection

segments, one originating at each subscriber, to a common network to network

interface meeting point; paragraph 56: connections server ensures that enough

bandwidth exists for a connection request for DSLAM; paragraph 58: request for

connection to its respective network service agent; paragraph 94: setup message

carriers QoS parameter, signaling message includes QoS requirement), then

requesting resources to IP access network corresponding to the calling subscriber and

the called subscriber, respectively (paragraph 35: connection server 25 determines

bandwidth available in ATU-Rs and DSLAMs; paragraph 56: connection server 25

ensures and grants bandwidth); b. edge routers (paragraph 97: ATM switch) of

corresponding to the calling subscriber and the called subscriber judging whether

enough resources can be provided for this service according to current resource

condition, if so, executing c., otherwise rejecting the service request of the calling

subscriber (paragraph 97: ATM switch determine if can satisfy the requirement of

connection based on traffic descriptor; paragraph 106: policy imposed on each

connection based on the traffic descriptor; paragraph 35: connection server 25

determines bandwidth available; paragraph 56: connection server 25 ensures and

grants bandwidth; paragraph 100: check whether there are enough network resources

to accommodate this connection; checks fail, a standard release message is returned);

and c. if there is an upward traffic stream sent from one of the calling subscriber and

the called subscriber to the corresponding IP access network for this service

(paragraph 35: subscriber's ATU-R and related DSLAM up-links), the corresponding

edge router informing the corresponding access network end device of the QoS

requirement for the service (paragraphs 94-95: signaling includes QoS requirement,

SETUP message to ATM switch and the QoS application sends a QoS connection

setup message through the API to the ATU-R; paragraph 97: ATM switch determine

if can satisfy the requirement of connection based on traffic descriptor; paragraph 98:

indicate initiation of the requested connection at the QoS requirements and VPI/VCI

used), and the corresponding access network end device performing bandwidth

limitation according to bandwidth parameters in the QoS requirement informed by the

corresponding edge router for the upward traffic stream (paragraph 35: the connection

server performs a call admission control step to determine if sufficient available

bandwidth exists in the ATU-Rs and DSLAM to accommodate the connection

request; paragraph 39: traffic packets are transmitted from the source subscriber 10

over QoS connection; paragraph 106: policy imposed on each connection based on

the traffic descriptor). Chen does not explicitly show if there is a downward traffic

stream to be sent to one of the calling subscriber and the called subscriber from the

corresponding IP access network for this service, the corresponding edge router

setting priority in the corresponding IP access network for this service and forwarding

the downward traffic stream to the corresponding subscriber according to the priority

set by the corresponding edge router. However Chen does show (paragraph 43) traffic

packet priority information carried in IP header; (paragraph 5) a DSL subscriber

connected to ATM through point-to-point protocol over Ethernet (PPPoE);

(paragraph 47) ATU-R 12 may functions like an Ethernet bridge with additional

packet mapping capabilities and the switching is based on MAC addresses and

mapping rules for outgoing PVC with QoS; (paragraph 90) service category (e.g.

CBR, VBR-rt, VBR-nrt, UBR); (paragraph 100) select a PVE with the lowest service

category; and (paragraph 101) ATM switch indicate via DSLAM initiation of the

requested connection.

b. Silverman shows (column 7, lines 11-14) tagging ToS with high priority when going

through IP network; and (column 10, line 65-column 11, line 4) Gigabit Ethernet

switches and Terabit routes use 802.1p&q, ToS and UDP port number to mark and

identify packet priority in an analogous art of ATM edge node switching equipment

utilized IP-VPN function.

c. It would have been obvious to a person of ordinary skill in the art at the time of the

invention was made to modify Chen's functions of interfacing ATM switch with

source subscriber through an ATU-R in bridge mode, i.e. Ethernet connection, and

DSLAM as per Figure 1 of Chen with Silverman's functions of tagging packet

priority on a Gigabit Ethernet switch or Terabit route.

d. The modification would have been obvious because one of ordinary skill in the art

would have been motivated to explicitly use the packet priority tagging capability as

per 802.1p&q shown by Silverman in the IP QoS connection over ATM connection

as per Chen (Fig. 1) and Silverman (column 1, lines 39-51)'s teaching.

e. Regarding claim 2, Chen shows wherein in step c, the edge router can transform service level into priority in the IP access network for the downward traffic streams and forward the downward traffic stream to the corresponding subscriber (paragraphs 90 and 97: levels of CAC based on service category, e.g. CBR, VBR-rt, VBR-nrt, UBR, select lowest service category and lowest bandwidth). Silverman shows wherein in step c, the edge router can classify the (downward traffic) stream first, after identifying the (downward) traffic streams, transform the identified traffic streams into priority in the IP access network and forward the (downward) traffic streams (column 7, lines 11-14: tagging ToS with high priority when going through IP network; column 10, line 65-column 11, line 4: Gigabit Ethernet switches and Terabit routes using 802.1p&q, ToS and UDP port number to mark and identify packet priority).

f. Regarding claim 3, Chen shows wherein step c is executed after the edge router has informed the service entity at the network service control layer that the IP access network can provide enough resources for the service and has received confirmation from the service entity (paragraph 97: ATM switch determine if can satisfy the requirement of connection based on traffic descriptor; paragraph 106: policy imposed on each connection based on the traffic descriptor; paragraph 35: connection server 25 determines bandwidth available; paragraph 56: connection server 25 ensures and grants bandwidth; paragraph 100: check whether there are enough network resources to accommodate this connection; checks fail, a standard release message is returned).

g. Regarding claim 4, Chen shows further comprising a step of the edge router obtaining

at least topology structure of the IP access network and bandwidth resources of each

interface of the IP access network through static configuration or dynamic

management protocol (Figure 1: connection server 25 sits on the edge of Internet 20;

paragraphs 54 and 56: connection server manages the complex topology of any

DSLAM, e.g. the total bandwidth available on a DSLAM trunk port (interface), pre-

provisioned PVCs; paragraphs 40 and 43: routing packets, policy routing instruction

includes protocol ID; paragraph 90: ATM switch 15 stores the following information

in relation to each Extended Virtual UNI: a service-active identifier, which is set upon

subscription to the service; a VPI/VCI range, identifying the VP and the range of

contiguous VCs within the VP; a maximum equivalent bandwidth and an available

bandwidth; and information regarding the PVCs pre-configured in the DSLAM 14;

see also paragraph 33 of applicant's specification).

h. Regarding claim 5, Chen shows after the access network end device receives the QoS

requirement for the service from the corresponding edge router in step c, the method

further comprising: setting items of a stream classification table according to

parameters for identifying the upward traffic stream contained in the QoS

requirement (paragraph 37: routing tables, routing entries; paragraph 43: type of

service; paragraph 90: PVC information include QoS parameters); classifying the

upward traffic stream sent from one of the calling subscriber and the called subscriber

(paragraphs 94-95: signaling includes QoS requirement, SETUP message to ATM

switch); and managing bandwidth according to bandwidth parameters for the upward

traffic streams when matched with the items of the stream classification table, and

processing the upward traffic stream when not matched as an upward traffic stream

without guaranteed QoS (paragraph 43: best effort; paragraph 39: traffic packets are

transmitted from the source subscriber 10 over QoS connection; paragraph 97: ATM

switch determine if can satisfy the requirement of connection based on traffic

descriptor; paragraph 106: policy imposed on each connection based on the traffic

descriptor).

i. Regarding claim 6, Chen shows after wherein the step c comprises: setting the

downward traffic streams with high priority and then forwarding the downward

traffic stream when the access network end device is an Ethernet (paragraph 43:

traffic packet priority in IP header; paragraph 47: Ethernet bridge with packet

mapping capabilities) or IP Digital Subscriber Line Access Multiplexer (DSLAM)

(paragraph 54: priority bandwidth on the DSLAM up-link ports); and sending the

downward traffic stream to Permanent Virtual Circuit (PVC) with guaranteed QoS for

further forwarding when the access network end device is an ATM DSLAM

(paragraph 3: guarantee application specific IP QoS via the combination of ATM

switched virtual connections (SVCs) and permanent virtual connection (PVCs)).

j. Regarding claim 7, Chen shows wherein parameters for identifying the upward traffic

stream can be a four-element group, a five-element group or a seven-element group

(paragraph 43: policy routing instruction syntax includes source IP network address,

source network mask, destination IP network address, destination network mask, IP

protocol ID, type of service (TOS), source port number, destination port number,

gateway IP address, interface IP address, metric; see also paragraph 37 of applicant's

specification).

k. Regarding claim 8, Chen shows further comprising: before receiving the QoS

requirement from the edge router of the IP access network for the upward traffic

stream, the access network end device processing the upward traffic stream sent from

one of the calling subscriber and the called subscriber as an upward traffic stream

without guaranteed QoS (paragraph 39: traffic packets are transmitted from the

source subscriber 10 over either the new QoS connection or the default route to the

ISP, based upon whether or not the packet originates from an application associated

with the new QoS connection).

l. Regarding claim 9, Chen shows wherein network devices between the edge router

and the access network end device of the corresponding IP access network forward

the downward traffic stream according to the priority of the downward traffic stream

(paragraph 88: ATU-R requires policy-based routing, enabling packets to be

forwarded on different VCs to conform to the SVC parameters).

m. Regarding claim 10 dependent on claim 5, Chen shows further comprising: after the

calling subscriber terminates the service, the edge router sending a QoS release

command (paragraph 104: sends a standard release message to the ATM switch 15,

the ATM switch 15 performs standard SVC release actions and adds bandwidth back

to the available bandwidth) to the access network end device, and the access network

device deleting corresponding items of the stream classification table according to the

QoS release command (paragraph 104: deletes the corresponding policy routing entry in the routing table).

n. Regarding claim 11 dependent on claim 6, Chen shows further comprising: after the calling subscriber terminates the service, the edge router sending a QoS release command (paragraph 104: sends a standard release message to the ATM switch 15, the ATM switch 15 performs standard SVC release actions and adds bandwidth back to the available bandwidth) to the access network end device, and the access network end device deleting corresponding items of the stream classification table according to the QoS release command (paragraph 104: deletes the corresponding policy routing entry in the routing table).

o. Regarding claim 12 dependent on claim 7, Chen shows further comprising: after the calling subscriber terminates the service, the edge router sending a QoS release command (paragraph 104: sends a standard release message to the ATM switch 15, the ATM switch 15 performs standard SVC release actions and adds bandwidth back to the available bandwidth) to the access network end device and the access network device deleting corresponding items of the stream classification table according to QoS release command (paragraph 104: deletes the corresponding policy routing entry in the routing table).

p. Regarding claim 13 dependent on claim 5, Chen shows further wherein managing bandwidth according to bandwidth parameters comprises: performing bandwidth limitation, by the access network end device, for the upward traffic stream matched with the items of the stream classification table according to the bandwidth

parameters (paragraph 35: the connection server performs a call admission control

step to determine if sufficient available bandwidth exists in the ATU-Rs and DSLAM

to accommodate the connection request).

q. Claim 14 is of the same scope as claim 1. It is rejected for the same reasons as for

claim 1.

Together Chen and Silverman disclosed all limitations of claims 1-14. Claims 1-14 are

rejected under 35 U.S.C. 103(a).

Response to Arguments

6.   Applicant's arguments filed on 12/10/2008 have been fully considered, but they are not persuasive.

   a. Applicant has amended claim 1 and add claim 14. Examiner has reviewed the amended claim change and claim 14. Examiner has reviewed the claim rejections as per office action mailed on 09/10/2008 and applied prior art, i.e. Chen and Silverman. Examiner has further searched and found Chen and Silverman are still applicable to current claim set. Claim rejections are updated as above to reflect amended and new claim language.

   b. Applicant has argued that QoS requirement is transmitted in different direction as per current application vs Chen (see 1st paragraph on page 11 of current amendment). Applicant has quoted paragraph 94 of Chen for supporting the argument. However, Chen is quoted from paragraphs 31-32, 35-36, etc. See item a above in claim rejection section 5 above. It seems applicant mixed the called party call set up procedure with the calling party procedure descriptions per Chen. Furthermore, last section of claim 1 described a downward traffic is to be send to either calling or called party from network where priority is used for guiding traffic. Step c. of claim 1 described upward traffic as from either calling or called toward the network where ATM QoS is used for setting up a call service. Both current application and Chen seem to follow the standard based ATM and IP service call interface specification, e.g. see paragraphs 48 and 54 of Chen. Chen seems to read upon claim 1 both in turn of ATM QoS and IP priority setting. Applicant has further argued that CALL-PROCEED message is to

indicate initiation of VPI/CPI should be used for this connection. However as pointed

in item b of Response to Arguments, office action mailed on 09/10/2008, the upward

traffic as per step c. of current claim 1 language, the QoS is per ATM requirement.

Chen has shown in paragraph 54, the connection server CAC function of ATM is to

work with ATU-R/DSLAM is ensure that QoS PVC is set up. This seems to further

show Chen has the disclosure on applicant's argument.

c. Applicant has argued that the amended claim limitation of "performing bandwidth

limitation" is not disclosed by Chen. Applicant has quoted paragraph 39 on routing

table. Chen has shown (paragraph 35) the connection server performs a call

admission control step to determine if sufficient available bandwidth exists in the

ATU-Rs and DSLAM to accommodate the connection request; (paragraph 39) traffic

packets are transmitted from the source subscriber 10 over QoS connection; and

(paragraph 106) policy imposed on each connection based on the traffic descriptor.

d. Applicant has further argued that Chen and Silver fail to teach and suggest the feature

of "if there is a downward traffic stream to sent to one of the calling subscriber and

the called subscriber from the corresponding IP access network for this service, ..."

(1st paragraph on page 13 of current amendment) Applicant asserted as per item c

above that Chen is merely a generic concept (2nd paragraph on page 13 of current

amendment). Examiner does not agree. As mentioned above, the interworking of

ATM and IP is known to one skill in the art and shown by Chen and Silver in

substantial detail to teach or suggest applicant's claimed invention as presented in the

claim rejections above. Silverman has shown (column 7, lines 11-14) tagging ToS

with high priority when going through IP network; and (column 10, line 65-column

11, line 4) Gigabit Ethernet switches and Terabit routes use 802.1p&q, ToS and UDP

port number to mark and identify packet priority in an analogous art of ATM edge

node switching equipment utilized IP-VPN function. Together Chen and Silver has

shown the setting of IP priority at position of edge router, e.g. DSLAM per Chen.

e. Applicant has argued that CAC per Chen is not the same as the bandwidth

management per claimed invention and asserted that CAC is the bandwidth

management of the signaling stream rather than bandwidth limitation of the traffic

stream (last paragraph on page 13 through 2nd paragraph on page 14 of current

amendment). Examiner has reviewed the cited the references from Chen on the

limitation of "bandwidth limitation of the traffic stream". As one skill in art of ATM

connection management knows CAC is used for ATM connection management based

upon bandwidth requirement as references cited from Chen seems to teach and

suggest, e.g. paragraph 35. Silver has stated (column 10, 65-column 11, line 4) that

ATM has the most defined QoS service level categories.

f. It is examiner's position that applicant does not draw substantially claim limitation

different one skill in the art of ATM from the ATM standard's teach or suggest as

well as presented by Chen and Silverman. Applicant's arguments are not persuasive.

Applicant is thus advised to look further into applicant's original specification and

claim set to draw additional amendment to differ from Chen and Silverman for

further prosecution.

Conclusion

7.   THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy

as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS

from the mailing date of this action. In the event a first reply is filed within TWO MONTHS

of the mailing date of this final action and the advisory action is not mailed until after the end

of the THREE-MONTH shortened statutory period, then the shortened statutory period will

expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

8.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Refer to the enclosed PTO-892 for details.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Peling A. Shaw whose telephone number is (571) 272-7968. The

examiner can normally be reached on M-F 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, William C. Vaughn can be reached on (571) 272-3922. The fax phone number for

the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the statu9s of an application may be obtained from the Patent

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Peling A Shaw/
Examiner, Art Unit 2444